the prior art. These changes are anticipated to be sufficient to overcome the current "claim rejections" cited in the previous office action.

Based on the previous rejections, the inventor applicant deduced that the examiner may have been interpreting the term parameter to mean "limits" rather than the intended meaning of a variable "value". Whereas the term "parameter" has multiple meanings, it may be beneficial to consider the specific definition intended in the context of this invention in particular, and in terms of 3D CAD modeling in general.
The applicant offers the following partial definition from
Webster's dictionary (www.m-w.com);

pa·ram·e·ter
Function: *noun*
Etymology: New Latin, from *para-* + Greek *metron* measure
1b : an independent variable used to express the coordinates of a variable point and functions of them

parametric equation
Function: *noun*
: any of a set of equations that express the coordinates of the points of a curve as functions of one parameter or that express the coordinates of the points of a surface as functions of two parameters

(Note: The term parameter can also be used to define "limits" which is not the intended usage or interpretation in this invention.)

In the contextual analogy to CAD modeling, there are two ways of modeling. "Parametric" CAD modelers are widely used in a variety of industries. For example a simplified parametric model of cylinder is based on two parameters, the length and radius or diameter, which can easily be changed or modified. Surface modelers are used to model irregular amorphous and organic shapes such as airfoils bones, teeth, etc.

In perceiving the term parameter to mean "limits", the examiner may have misconstrued the term "parametric data" to mean a continuum of coordinates of points defining the line

of a secondary profile. In the amended clarification of the terms the inventor/applicant hereafter defines these terms to mean "a finite number of parametric values, such as angular and/or linear dimensions, sufficient to characterize how the object changes in cross-section in 3-dimensional space with respect to primary 2-dimensional profile". The primary profile and parameter values are then used to calculate (not measure or digitize) a virtual secondary profile, from which a virtual CAD representation of the object can be made.

Responses to Specific Claim Rejections

The inventor/applicant acknowledges that, in general, the use of 2D & 3D digitizers, CAD models, CAM Software, and CNC tools, is well known in the state of the art and therefore not novel. With regard to the use of CNC controlled cutting tools and their use in fabricating 3d models, the inventor/applicant makes no claims the novelty of this particular singular element of this invention. That being said, the inventor/applicant suggests that citation of Kinzie, and only Kinzie, is not relevant.

However, the inventor/applicant strongly contends that his particularly novel elements of this invention, namely the method of capturing unique 2D profiles and parametric inputs and 3D CAD model creation is unprecedented, unanticipated, useful, and novel. By combining the unique elements of the invention with the conventional elements of the invention (namely the CAD/CAM/CNC and e-mail) the result is here before unachievable advantages and conveniences as illustrated by the example applications.

Schmitt's invention is essentially defined by digitizing multiple profiles. Schmitt discloses a single 2-dimensional profile, but only as part of the layer-by-layer process to build a 3-d model. Schmitt neither disclosed nor anticipated any means, method, or provisions to enable his invention to work from only a single profile. If Schmidt had only one profile, what would he do? Further, all of Schmitt's profiles are digitized, and none are calculated. Schmitt's method also requires the presence of the physical object from which an impression-type casting can be made and subsequently digitized and reproduced. Schmitt's digitization process is essentially just a method of capturing the actual shape of an object. While Schmitt discloses the common practice of smoothing, filtering, or otherwise refining digitized data, he does not teach any means of extrapolating surfaces in accordance with an assumed shape form.

The inventor/applicant points out that neither the term "parametric" nor the term "parameter" are found anywhere in Schmitt's patent. If, as the examiner has implied, Schmitt's process is "parametric", then what are the specific parameters and what do they represent? Schmitt's process the only data inputs are profiles. The only value that could arguably be considered a "parameter" is the distance between layers, which really relates only to the resolution and accuracy of the approximation, not to the definition of the surface. In contrast, the parameters of this invention are clearly defined as actual physical geometric measurements such as side angles and diameters.

The adaptation and use of a parametric approach in this invention has both pros and cons. For example whereas Schmitt's process collects true profile data at each layer, and is therefore superior for reproducing geometry that is unique and irregular in three-dimensional space, such as the shape of tooth.

In contrast, this invention is based on the creation of a secondary profile that is assumed to be "parametrically" of the same general form or "shape factor" as the primary profile but one that is modified or altered based on mathematical calculations to differ in accordance with the influence of specific characteristic parametric inputs.

To illustrate the difference between Schmitt and Sutula's inventions in the context of the particular and realistic applications for which Sutula's invention was originally conceived and described in this pending patent application. Consider using Schmitt's method for the application of fitting recoil pads to gunstocks or ribs to gun barrels. One would have to prepare the gunstock or barrels for casting by applying a protective surface finish compatible mold release. Applying a casting compound to the gunstock or gun barrel. Cutting the casting in to as many pieces as may be required to remove it from the gunstock or barrel without damaging the gunstock or barrel. Reassembling the casting and backfilling the castings with a color contrasting material, sectioning and digitizing the castings. And ultimately preparing the digitized data for conversion into a CAD models, CAM software, and CNC machine tools to create reproductions or fitted parts. The difference in feasibility, convenience, and overall utility are clear. Thus is how is it that Sutula's invention the same or not novel over Schmitt?